The Journal of Comparative Neurology

FOUNDED BY C.L. HERRICK, 1891
A WISTAR INSTITUTE PRESS JOURNAL PUBLISHED BY ALAN R. LISS, INC.

EDITORIAL BOARD
SANFORD L. PALAY, *Editor-in-Chief*
Harvard Medical School

MILTON W. BRIGHTMAN
National Institutes of Health
VICTORIA CHAN-PALAY
Harvard Medical School
W. MAXWELL COWAN
Salk Institute
FORD F. EBNER
Brown University
THOMAS FINGER
University of Colorado
Denver
MICHAEL D. GERSHON
Columbia University
ANN M. GRAYBIEL
Massachusetts Institute of Technology
R.W. GUILLERY
University of Chicago
JON H. KAAS
Vanderbilt University

HARVEY J. KARTEN
State University of New York
Stony Brook
STEPHEN T. KITAI
Michigan State University
LAWRENCE KRUGER
University of California
Los Angeles
RAYMOND J. LASEK
Case Western Reserve University
HAJIME MANNEN
Tokyo Medical and Dental University
GEORGE F. MARTIN
Ohio State University
ROBERT Y. MOORE
State University of New York
Stony Brook
ENRICO MUGNAINI
University of Connecticut
WALLE J. H. NAUTA
Massachusetts Institute of Technology

R. GLENN NORTHCUTT
University of Michigan
ALAN PETERS
Boston University
VIRGINIA M. PICKEL
Cornell Medical Center
PASKO RAKIC
Yale University
HENRY J. RALSTON III
University of California
San Francisco
CONSTANTINO SOTELO
Centre Médico-Chirurgical Foch
Paris
JEROME SUTIN
Emory University
GEORGE SZÉKELY
Institute of Anatomy
Debrecen

VOLUME 204
JANUARY 1–FEBRUARY 1, 1982

COPYRIGHT © 1982 BY
ALAN R. LISS, INC.
All rights reserved

CONTENTS

VOL. 204 JANUARY 1, 1982 No. 1

CONTENTS

R. ROMAND AND M. -R. ROMAND.
Myelination Kinetics of Spiral Ganglion Cells in Kitten 1

STEPHEN E. FISH, DIANNE K. GOODMAN, DAVID C. KUO, JEFFREY D. POLCER, AND ROBERT W. RHOADES.
The Intercollicular Pathway in the Golden Hamster: An Anatomical Study 6

JOHN A. WILSON AND CHRISTINE E. PHILLIPS.
Locust Local Nonspiking Interneurons Which Tonically Drive Antagonistic Motor Neurons: Physiology, Morphology, and Ultrastructure 21

JOHN J. VAN RYBROEK AND FRANK N. LOW.
Intercellular Junctions in the Developing Arachnoid Membrane in the Chick 32

PER BRODAL.
Further Observations on the Cerebellar Projections From the Pontine Nuclei and the Nucleus Reticularis Tegmenti Pontis in the Rhesus Monkey 44

JOHN D. PORTER AND ROBERT F. SPENCER.
Localization and Morphology of Cat Extraocular Muscle Afferent Neurones Identified by Retrograde Transport of Horseradish Peroxidase 56

ANTHONY N. VAN DEN POL AND JOHN R. CASSIDY.
The Hypothalamic Arcuate Nucleus of Rat – A Quantitative Golgi Analysis 65

ERRATUM.
Gattass, R., C.G. Gross, and J.H. Sandell: Visual topography of V2 in the macaque. J. Comp. Neurol. (1981) 201: 519–539 99

GUIDE FOR AUTHORS 100

VOL. 204 JANUARY 10, 1982 No. 2

CONTENTS

PAUL WITKOVSKY AND CHEN-YU YANG.
Uptake and Localization of ^{3}H-2 Deoxy-D-Glucose by Retinal Photoreceptors 105

MICHAEL H. ROWE AND BOGDAN DREHER.
Retinal W-Cell Projections to the Medial Interlaminar Nucleus in the Cat: Implications for Ganglion Cell Classification 117

RANDOLPH B. VEAZEY AND CHARLES M. SEVERIN.
Afferent Projections to the Deep Mesencephalic Nucleus in the Rat 134

A. HUGHES AND DAVID I. VANEY.
The Organization of Binocular Cortex in the Primary Visual Area of the Rabbit 151

ANTON REINER AND HARVEY J. KARTEN.
Laminar Distribution of the Cells of Origin of the Descending Tectofugal Pathways in the Pigeon *(Columba livia)* 165

CHARLES ZUCKER AND STEPHEN YAZULLA.
Localization of Synaptic and Nonsynaptic Nicotinic-Acetylcholine Receptors in the Goldfish Retina 188

DEEPAK N. PANDYA AND BENJAMIN SELTZER.
Intrinsic Connections and Architectonics of Posterior Parietal Cortex in the Rhesus Monkey 196

VOL. 204 JANUARY 20, 1982 No. 3

CONTENTS

SADAO SHIOSAKA, KENICHI TAKATSUKI, MASAHIRO SAKANAKA, SHINOBU INAGAKI, HIROSHI TAKAGI, EMIKO SENBA, YURIKO KAWAI, HISASHI IIDA, HIDEO MINAGAWA, YOSHINOBU HARA, TAKASHI MATSUZAKI, AND MASAYA TOHYAMA
Ontogeny of Somatostatin-Containing Neuron System of the Rat: Immunohistochemical Analysis. II. Forebrain and Diencephalon 211

RALPH LYDIC, H. ELLIOTT ALBERS, BEVERLY TEPPER, AND MARTIN C. MOORE-EDE
Three-Dimensional Structure of the Mammalian Suprachiasmatic Nuclei: A Comparative Study of Five Species 225

SHARLEEN T. SAKAI
The Thalamic Connectivity of the Primary Motor Cortex (MI) in the Raccoon 238

SUSAN F. SCHAEFFER, ELIO RAVIOLA, AND JOHN E. HEUSER
Membrane Specializations in the Outer Plexiform Layer of the Turtle Retina 253

DENNIS M. DACEY
Axon Morphology of Mesencephalic Trigeminal Neurons in a Snake, *Thamnophis sirtalis* 268

MARY CARLSON AND KATHLEEN A. FITZPATRICK
Organization of the Hand Area in the Primary Somatic Sensory Cortex (SmI) of the Prosimian Primate, *Nycticebus coucang* 280

KATHLEEN A. FITZPATRICK, MARY CARLSON, AND JOHN CHARLTON
Topography, Cytoarchitecture, and Sulcal Patterns in Primary Somatic Sensory Cortex (SmI) of the Prosimian Primate, *Perodicticus potto* 296

VOL. 204 FEBRUARY 1, 1982 No. 4

CONTENTS

D.R. SENGELAUB AND B.L. FINLAY
Cell Death in the Mammalian Visual System During Normal Development: I. Retinal Ganglion Cells 311

B.L. Finlay, A.T. Berg, and D.R. Sengelaub
Cell Death in the Mammalian Visual System During Normal Development: II. Superior Colliculus 318

R. Glenn Northcutt
Localization of Neurons Afferent to the Optic Tectum in Longnose Gars 325

G. Grant, B. Wiksten, K.J. Berkley, and H. Aldskogius
The Location of Cerebellar-Projecting Neurons Within the Lumbosacral Spinal Cord in the Cat. An Anatomical Study With HRP and Retrograde Chromatolysis 336

Patrick W. Mantyh
The Midbrain Periaqueductal Gray in the Rat, Cat, and Monkey: A Nissl, Weil, and Golgi Analysis 349

Jean Jacoby and Charles B. Kimmel
Synaptogenesis and Its Relation to Growth of the Postsynaptic Cell: A Quantitative Study of the Developing Mauthner Neuron of the Axolotl 364

Barry J. Davis, Gail D. Burd, and Foteos Macrides
Localization of Methionine-Enkephalin, Substance P, and Somatostatin Immunoreactivities in the Main Olfactory Bulb of the Hamster 377

Kirk R. Manogue and Fernando Nottebohm
Relation of Medullary Motor Nuclei to Nerves Supplying the Vocal Tract of the Budgerigar *(Melopsittacus undulatus)* 384

Mitchell L. Berk, Troy A. Reaves, Jr., James N. Hayward, and Judith A. Finkelstein
The Localization of Vasotocin and Neurophysin Neurons in the Diencephalon of the Pigeon, *Columba livia* 392

Michael D. Gershon and Diane L. Sherman
Identification of and Interactions Between Noradrenergic and Serotonergic Neurites in the Myenteric Plexus 407

Errata
Marfurt, Carl F.: The central projections of trigeminal primary afferent neurons in the cat as determined by the transganglionic transport of horseradish peroxidase. J. Comp. Neurol. (1981) 203:785–798 422

Smeets, Wilhelmus J.A.J. and Steve J.B. Timerick: Cells of origin of pathways descending to the spinal cord in two chondrichthyans, the shark *scyliorhinus canicula* and the ray *raja clavata.* J. Comp. Neurol. (1981) 202:473–491 424

Index 425

How To Comply With The New Copyright Law

Participation in the Copyright Clearance Center (CCC) assures you of legal photocopying at the moment of need.

Libraries everywhere have found the easy way to fill photocopy requests legally and instantly, without the need to seek permissions, from more than 3000 key publications in business, science, humanities and social science. You can:

Fill requests for multiple copies, interlibrary loan (beyond the CONTU guidelines), and reserve desk without fear of copyright infringement.

Supply copies from CCC-registered publications simply and easily.

The Copyright Clearance Center is your one-stop place for on-the-spot clearance to photocopy for internal use.

Its flexible reporting system accepts photocopying reports and returns an itemized invoice. You send only one convenient payment. CCC distributes it to the many publishers whose works you need.

And, you need not keep any records, the CCC computer will do it for you. Register now with the CCC and you will never again have to decline a photocopy request or wonder about compliance with the law for any publication participating in the CCC.

To register or for more information, just contact:

Copyright Clearance Center
21 Congress Street
Salem, Massachusetts 01970
(617) 744-3350

a not-for-profit corporation

NAME _____ TITLE _____

ORGANIZATION _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

COUNTRY _____ TELEPHONE _____